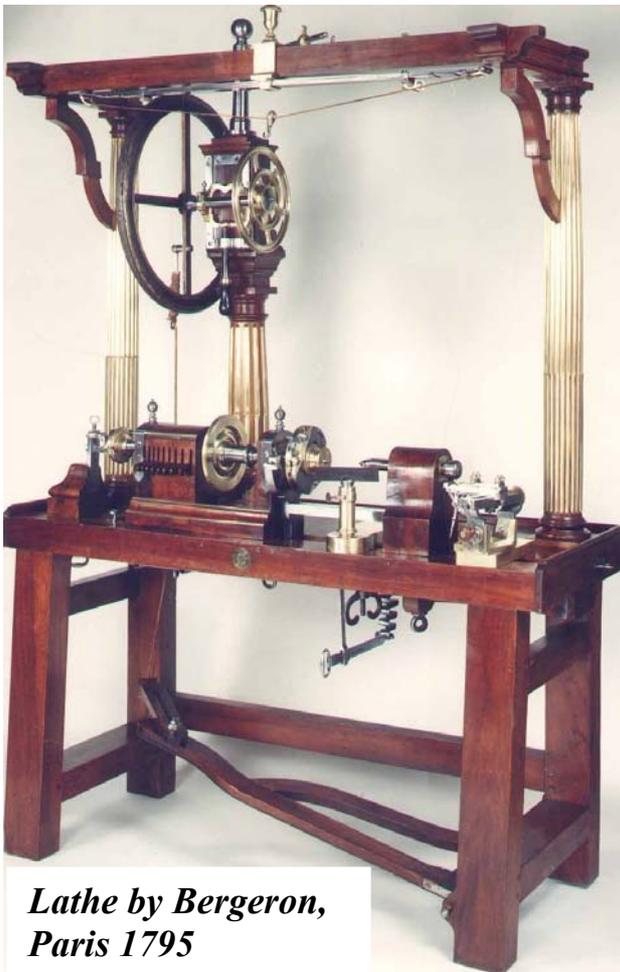


# ORNAMENTAL TURNING LATHES AND THEIR ACCESSORIES

by John Edwards

## INTRODUCTION

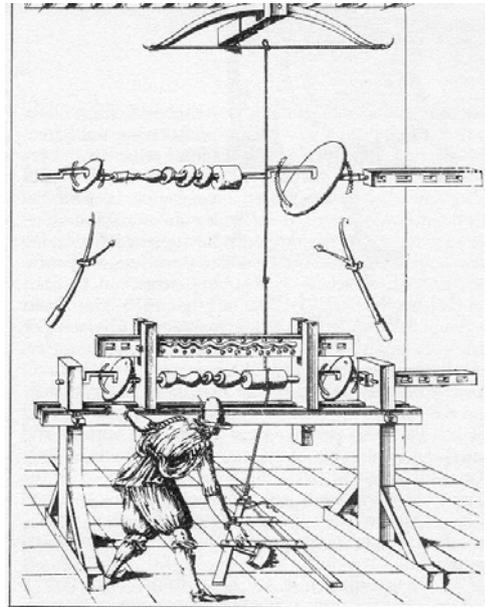
Complex lathes started to be developed as early as the 15<sup>th</sup> century when the nobility of Europe commissioned and collected the beautiful wood and ivory turnings made on them. During the 16<sup>th</sup> to 18<sup>th</sup> centuries kings and princes employed the best turners and engineers to produce ever more complex machines and fantastic artefacts and many of the nobility took up ornamental turning as a hobby. Following the French Revolution the centre of interest in this hobby transferred from France to England where it spread widely, not only among the aristocracy but later to the wealthy middle



***Lathe by Bergeron,  
Paris 1795***

*(photo courtesy Christies, London)*

advanced towards the cutter under the control of a swash-plate for obliquely-inclined cutting, by a rosette for cutting wavy lines on cylinders or by a screw-thread guide for cutting short screw threads.



***Besson's O.T. lathe of 1578***

classes. This change was largely influenced by John Jacob Holtzapffel, an engineer of Alsatian descent who moved from Strasburg to London in 1792 and set up a lathe-making business that was to flourish until the First World War. With the advent of the motorcar the hobby of ornamental turning was largely abandoned until 1948 when the Society of Ornamental Turners was formed.

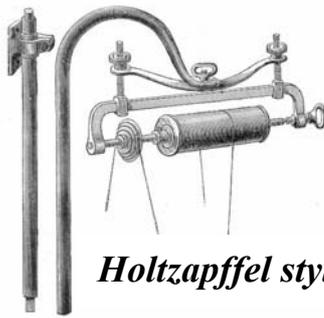
**An ornamental turning lathe** may be described as a combination of a light engineering lathe with a milling or engraving machine and having additional complexities to position the work and/or the cutting tool to move on a path other than circular. The following notes describe the main features:

### **The Traversing Mandrel or Screw-Mandrel (or lathe spindle)**

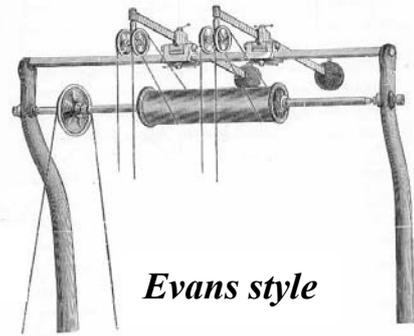
traverses (or slides) so that the work may be

**The Overhead Drive** is a system of bands and pulleys to drive a Cutting Frame (holder of a flying cutter) which cuts shapes or patterns into the work according to the profile of the cutter and its path of movement.

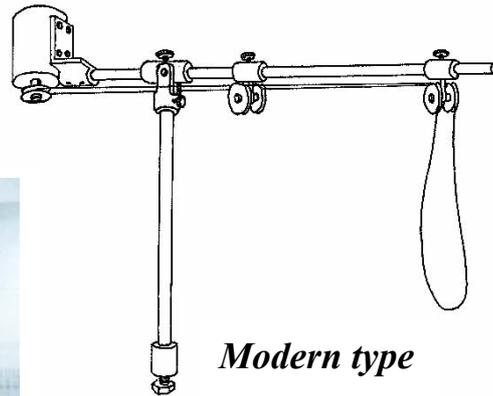
Early complex lathes had an overhead flywheel to drive the ornamental cutters but this was not popular in England where Holtzapffel introduced the 'Shepherd's Crook' type whereby a band from the under-bed



*Holtzapffel style*



*Evans style*



*Modern type*

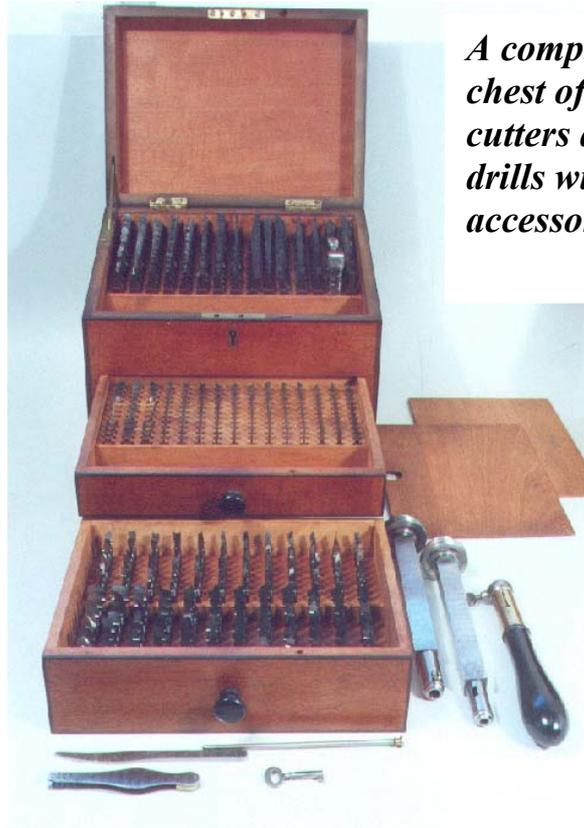


*High-class Ornamental Turning Lathe*

flywheel drives a drum from which a second band drives the ornamental cutting frame. J H Evans later introduced a Double Standard Overhead having cranes with weights and jockey pulleys to give adequate tension to the drive band at all times. Several other methods were developed, one of the best of these is the single crane type often used by modern turners with an electric motor doubling as a counterbalance weight.

Here is a typical high-class late model Ornamental Turning lathe by Holtzapffel (made at the start of the First World War) with double mahogany frame, treadle, flywheel, shepherd's crook overhead, screw-mandrel headstock, screw-barrel tailstock, ornamental slide-rest and mahogany backboard chest of tools.

**Cutters and Drills** were supplied in mahogany chests. There are several sizes of cutters: long ones for use as fixed tools, called Slide-rest cutters, short ones for use in the revolving Cutting Frames, small section ones for the Eccentric Cutting Frame and usually two sizes of drills; the drills have tapered shanks made individually to fit each hand-made drilling spindle. Two drilling spindles are shown at the right-hand side of the chest, together with a pad handle for using slide-rest cutters as hand-tools. In front of the chest is a lever for ejecting drills and tweezers for extracting cutters from the chest.



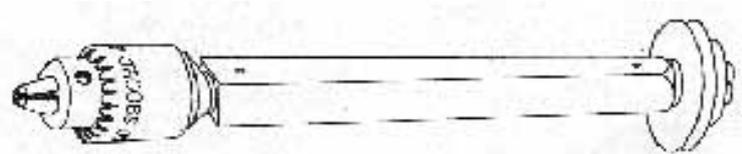
*A complete chest of cutters and drills with accessories*

**The Drilling Spindle** is used to drills single holes, patterns of holes or, like a router, to cut flutes. Some drills have fancy profiles for cutting mouldings. Many modern turners

use a small Jacobs Chuck and straight shank drills.

Much of the ornamentation on this Victorian style Posyholder was done with the drilling spindle; the techniques used include:

cutting pearls or beads, cutting flutes and drilling rings and holes.



*Drilling Spindle with Jacobs Chuck*

